## Abstract

There are provided;

- (i) a solid catalyst component obtained by contacting a trivalent titanium atom-containing solid catalyst component precursor(C) with a halogeno compound(A) of the 13 (Ma) or 14 (Wa) group of elements in the periodic table of the elements and an electron donor(B), or a solid catalyst component obtained by contacting an intermediate product with a titanium-halogen bond-carrying compound(D), the intermediate product being obtained by contacting the solid catalyst component precursor(C) with a halogeno compound(A) of the 14 (Na) group of elements in the periodic table of the elements and the electron donor(B), or a solid catalyst component comprising a magnesium atom, a titanium atom, a halogen atom and an electron donor and having a relative surface area of not more than 30 m<sup>2</sup>/g, the catalyst component being superior in a particle form,
- (ii) a catalyst comprising the solid catalyst component and an organoaluminum compound, the catalyst being high in polymerization activity, so that there is no need to remove a catalyst residue from a polymer obtained after the polymerization, and
- (iii) a process for producing an olefin polymer using the catalyst, the polymer produced being superior in powder properties and low in a content of lower molecular weight components.